An Account of a Trigonometrical Survey of Mayo, one of the Maritime Counties of Ireland. By William Bald, *Civil Engineer, Member of the Geological Society, London, and M. R. I. A.*

Read April 30th, 1821.

IN the year 1809 I was employed by the Grand Jury of Mayo to make a map and survey of their county, which was to be drawn and laid down from a scale of three inches to the Irish mile. The whole of the summer of 1809 was occupied in constructing a geometrical map of the environs of Castlebar, and in obtaining a knowledge of the face of the country, with a view to the planning of the triangles, and the measurement of a base as the foundation of the general geometrical survey and map. After a diligent search, no plain could be found that would admit of a base of more than two miles in length, except by going through bog. One of these was adopted, and extended to thirty-one thousand nine hundred feet, which was measured three times carefully over with a fifty feet chain, using iron pins. I have drawn out a separate diagram of the triangles calculated from this base as a comparison with the results obtained from more exact data. I ordered Mr. Edward Troughton, of London, to make a chain of one hundred feet in length, which might be applied to a flat surface of soil, not having the means of resorting to the more exact method of using coffers in measuring the bases, and he accordingly sent me one, consisting of twenty links, each five feet long, of a simple but accurate construction. An extract from

Mr. Troughton's letter may not be uninteresting.—" The terminat-
" ing lines of the iron chain were set off from the British brass
" standard, at the temperature of 65°. of Farenheit's thermometer,
" this is 10°. above the temperate point; the correction for this, ac-
" cording to the expansion of iron with heat is .07704 of an inch
" upon the whole length, and those will be data for reducing that
" length for any other temperature; the chain will, I think, require
" three people to carry it forward, for it should not be dragged on
" the ground: care must be taken in folding it: in the most accu-
" rate operations the pieces with sliding lines should be used for re-
" gistering the end of the chain. In other cases the arrows may be
" sufficient, being more expeditious. As the accuracy of the chain
" is extreme, I leave you to judge if it may not supersede the stand-
" ard which you ordered of me."—To convince myself of the accuracy and power of this instrument, I measured on the lake of Castlebar, when frozen, a distance of near two miles, and by repeating the measurement it turned out, after making the necessary allowances for temperature, to come within one inch: a result I scarcely expected, and which proved its excellence for the purposes intended. This trial was made by lines of coincidences, using the sliding pieces of brass for registering correctly the length of each chain, as the surface of the ice was perfectly smooth. It was afterwards proved in several measurements on firm sands, dry at low water, and on level meadow-land, not to differ more than two inches in two miles. From the circumstance before stated, that Mayo afforded no flats, on sufficiently favourable ground, of more than two miles in length, I determined on having a series of short and accurate bases, in preference to long ones, which might be doubtful, from having been measured over an irregular surface.

The following were the bases measured:

	Feet
1. Base on the Moy plain flat meadow, subject to flood, in the barony of Gallen	6800
2. Base on the plain at the head of Lough Carra, in the barony of Carra, meadow and bottom .	6330
3. Base on the sands of Killala, in the barony of Tyrawley	9500
4. Base on the sands between the island of Annagh and Inishbegit, in the half barony of Erris .	9971.9
5. Base on the sands of Bertragh, barony of Murrisk	4545
6. Base in the barony of Costello, along a flat bog road	8600

7. Base over the ice, when the lake of Castlebar was frozen in the Barony of Carra, 11097.4 feet, and which was rendered of no use, as some idle person had destroyed the mark, which terminated the length of the base. I would recommend in all similar operations double marks within a few feet of each extremity. The bases were all measured twice. In repeating the measurements with Mr. Troughton's chain, I always observed that the lengths measured during the warm part of the day were minus when compared with the same lengths taken in the evening, when the cold had commenced. The thermometers always afforded an accurate correction. All the bases, with the exception of the one over the ice, were measured during the warm part of the summer; the corrections were small. In measuring over the ice of Castlebar lake in January 1814, Farenheit's thermometer stood at a mean of 29°; the temperature, when the chain had its terminating lines laid off from the British brass standard in the Tower of London, was 65°. of Farenheit's thermometer; this is a difference of 36°, and using the data given by Mr. Troughton, we shall have the following results;

		Feet
Length of base measured on the ice		11,100
36 × 007704 × 111 = 30,785184 = ...		2,56543
12	Correct length .	11097.43457

Base measured on the Moy plain.

First measurement	6800.
Mean of the thermometer 59° standard 65° difference 6°.	
6 × 007704 × 68 = .046224 = 3.143232 = ...	.261936
12 Correct length	6799.738064

Second measurement	6800.375
Mean of the thermometer 51°	
Standard 65° difference 14°	
14 × 68 × 007704 = 7,334208 = ...	611184
12 Correct length .	6799.763816

Base measured on the sands in the half barony of Erris.

First measurement	9971.5
Mean of the thermometers 72° standard 65° difference 7°	
007704 × 7 × 9971.5 = 53771608 = ...	.448096
12 Correct length .	9971.948096

Second measurement	9971.35
Mean temperature 73° Standard 65° difference 8°	
007704 × 8 × 9971. = 614532672 = ...	.512110
12 Correct length	9971.862110

I had every reason to be satisfied with the result of the measurements obtained by the chain. I had ordered Mr. Troughton to make a theodolite, two feet diameter, although not for the express purpose of this survey, yet I had it in contemplation to observe with it the large triangles. Mr. Troughton had been much engaged, and after waiting a considerable time, I despaired of receiving the instrument. The Grand Jury were anxious for the progress of the Survey, when I resolved upon commencing the triangulation with a theodolite seven inches diameter, which I had intended to use, in combination with the large one, and which gave, in observing the three angles of a triangle, a difference of not more than one minute, and in many instances to thirty seconds. I was not able to observe all the angles of each triangle, a proceeding which ought to be strictly attended to in all trigonometrical operations; and in the planning of triangles to have them as nearly equilateral as possible. The observations from my instrument were not sufficiently minute to warrant any spherical correction for the triangles, which I greatly regret; but, having so many bases, I possessed the means of verification on all sides, and, as will be seen by the map of triangles, was seldom doubtful of more than twenty-five feet. Though I am well aware that the results of this survey cannot by any means be compared to the great operations commenced in England by General Roy, and carried on by Colonel Mudge and Major Colby under the Board of Ordnance, or to those of France under Delambre, Mechain, Arago, and Biot, I am yet inclined to think they may be made useful in correcting our maps of Ireland, and that a collection even of similar observations would not only be serviceable in improving the geography of this kingdom, but is much wanted for the safety of the navigator. As a proof of this, I here subjoin a few observa-

tions for determining the latitude of Castlebar steeple; also a table of latitude obtained from the various maps and charts published of Ireland, by which it will appear that almost every headland requires to be verified and corrected.

Observations taken by a ten inch Sextant at Castlebar Steeple.

1823.	⊙ Meridian Altitude.	Latitude.
	° ′ ″	° ′ ″
January 6	15.11.45	53.49·35,9
18	15.34.40	53.49.59,9
19	15.46.45	53.49. 8,3
21	16.12.39	53.49.51,4
24	16.53.39	53.50. 1,2
Feb. 5	20. 8.44	53.49.53,4
15	23.21.54	53.50. 9,2
16	23.42.19	53.49.49,
28	28.03.15	53.50. 3,6
March 9	31.30.15	53.50.35,9
April 11	44.18.48	53.50. 0,7
May 1	51. 6.14	53.49. 0,2
		53.49.50 mean.

Table of Latitude from Maps and Charts of Ireland.

	Mc. Kenzie's Charts.	Taylor's Map.	Arrowsmith's.	Beaufort's.	Ballast Office Map.	Huddart's Chart.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Shark Head	53.32.30	53.29.30	53.40. 8	53.20. 0	53.35.40	53.39.30
Achill Head	53.59. 0	53.48.20	54. 5. 0	53.58. 0	53.55. 0	54. 2. 0
Erris Head	54.18.30	54.12.20	54.27.20	54.18.20	54.18. 0	54.23.20
Killala	54.11. 0	54. 6. 0	54.17. 0	54.12 20	54.13. 0	54.16.30
Castlebar	... ...	53.42.15	53.54. 0	53.50. 0	53.51. 0	
Clare Island Light-house	53.51.30	53.41.50	53.54. 0	53.49.30	53.49.30	53.53.30
(1) Inishtrahul Light-house	55.24.30	55.21. 0	55.23. 0	55.23.40	55.26. 0	55.27.30
Copeland do.	54.37.30	54.44. 0	54.42.30	54.40.30	54.52.30	54.41. 0
Arranmore do. Donegal	54.59.30	54.55.30	54.58.30	55. 1.30	55. 0. 0	55. 1.40
Fannet Light-house, Loughswilly	55.14. 0	55.12. 0	55.15. 0	55.16.40	55.17.30	55.17. 2
Pigeon house do. Dublin Bay	... ...	53.21. 0	53.21.40	53.21. 0	53.31. 0	53.21. 0
Arran do. Galway Bay	53. 4.40	52.57. 0	53. 7. 0	53. 6. 0	53. 6. 0	53.10.30
Wicklow Head Light-house	... ...	52.58. 0	52.58. 0	52.58.30	53. 0.30	52.58.30
(2) Loop Head do.	52.22.10	52.20. 0	52.37. 0	52.31. 0	52.32. 0	52.29. 0
(3) Kerry Head	52.16. 0	52.12. 0	52.29.30	52.23. 0	52.22. 0	52.21. 0
(4) Cape Clear Light-house	51.21. 0	51. 9.20	51.19:20	51.19.30	51.23. 0	51.21.20
(5) Kinsale do.	51.35. 0	51.22. 0	51.34.40	51.37. 0	51.36.20	51.36. 0
(6) Hook Light-house, Waterford	52 5.20	52. 1. 0	52. 5.40	52. 6. 0	52.13.30	52. 9.20
(7) Tusker do.	52.11.20	52. 4. 0	52.12.30	52.13. 0	52.18. 0	52.12.30
Smalls Light-house, by Survey of England 51°.43′.18″	not laid down,	not laid down,	not laid down,	51.49. 0	52. 0. 0	51.43. 0
Bengore Head	55.12. 0	55.13.30	55.15.20	55.15.30	55.19. 0	55.16. 0
Brandon Head	52.10.30	52. 5. 0	52.22. 0	52.17. 0	52.16.30	52.15. 0
(8) Cork	... ...	51.42. 0	51.53,50	51.54. 0	51.54. 0	... ...
Dursey Island, deduced from Cape Clear	51.29.30	... ...	... ...	... ...	... ...	... ...
Dursey Island, deduced from Kinsale	51.30. 0	... ..	... ...	... ...	... ...	51.32. 0
(9) Tory Island, westhead	55.13.30	... ...	... ...	... ...	... ...	55.16.40
Martin Head	55.21. 0	... ...	... ...	... ...	... ...	55.24.30
Centre of Tory Island, Longitude west from Greenwich	... ...	... ...	... ...	8. 6. 0	8. 1. 0	8.12. 0

(1) Inishtrahul, by Mr. Lamont's Observations 55°.26′.28″. See Purdy's Memoir descriptive of the Chart of the Atlantic, 1817.
(2) Loop Head, by Captain Shortland 52°.37′.0″. Do. do.
Do. do. In Huddart's large Sheet Chart of the Shannon it is mentioned by Mc. Kenzie Latitude 52°.24′.0″. by Captain Shortland 52°.37′.0″. mean 52°.31′.0″. the latitude obtained by me from Mc. Kenzie's Chart is 52°.22′.10″. and the Light House laid down in Huddart's Chart is 52°.29′.0″.
(3) Kerry Head, by Captain Shortland 52°.30′.0″. Memoir Atlantic.
(4) Cape Clear, by Admiral Knight 51°.25′.0″., by Captain John Udney 51°.28′.22″., by Captain John Wilson 51°.27′.45″. The two last were commanders from the River Clyde. Mean result of varying authorities 51°.26′.0″., Memoir Atlantic.
(5) Kinsale Light House by Huddart's Chart of 1812, 51°.31′.0″.
(6) Hook do. do. do. do. of 1812, 52°.5′.0″.
(7) Tusker do. do. by Mc. Kenzie's Chart 52°.11′.0″. deduced from Cape Clear. If the sheets were correctly joined the result would be 52°.12′.0″.
(8) Cork, by Dr. Longfield 51°.53′.54″.
(9) Tory Island west head, from the chart of the West Coast, by Mc. Kenzie 55°.12′.0″.

Barometrical and trigonometrical height of the mountains and hills in Mayo.

	Feet over the Sea	
	Barometrically.	Trigonometrically.
CROAH PATRICK, or the Reek. Mean of three Observations from sands of Bertra	...	2509
Two from Carramore	...	2536
Do. from Corvockbrack	...	2530
Do. from Oughty	...	2514
Two from Runa	...	2528
From Myles' Monument, Clare Island	...	2556
		15173
		2528 mean
Mean of two by the Barometer	2532	
FURMNAGAR.		
From the Reek	...	2562
By the Barometer	2569	
KNOCK-NA-MUITREA.		
From the Reek	...	2729
Do. do.	...	2737
Do. Myles' Monument	...	2724
Do. Carramore	...	2711
CORVOCKBRACK.		
From Runa, mean of two	...	1281
Do. Carramore	...	1281
By the Barometer	1254	
OUGHTY.		
By the Barometer	1092	
From Corvock	...	1097
AULMORE-HILL.		
From Runa	...	922
Do. Carramore	...	936
Do. Corvockbrack	...	919
INISHTURK (Tower-hill).		
Mean of four	...	591
Cuscamecurragh	...	2412
NEPHIN.		
From Kilalla Bay	...	2658
Do. Cruoghmore	...	2621
Do. Do.	...	2635 } 2639 mean.
From the Puntoon by the Sextant	...	2633

Barometrical and trigonometrical heights of the mountains and hills in Mayo.

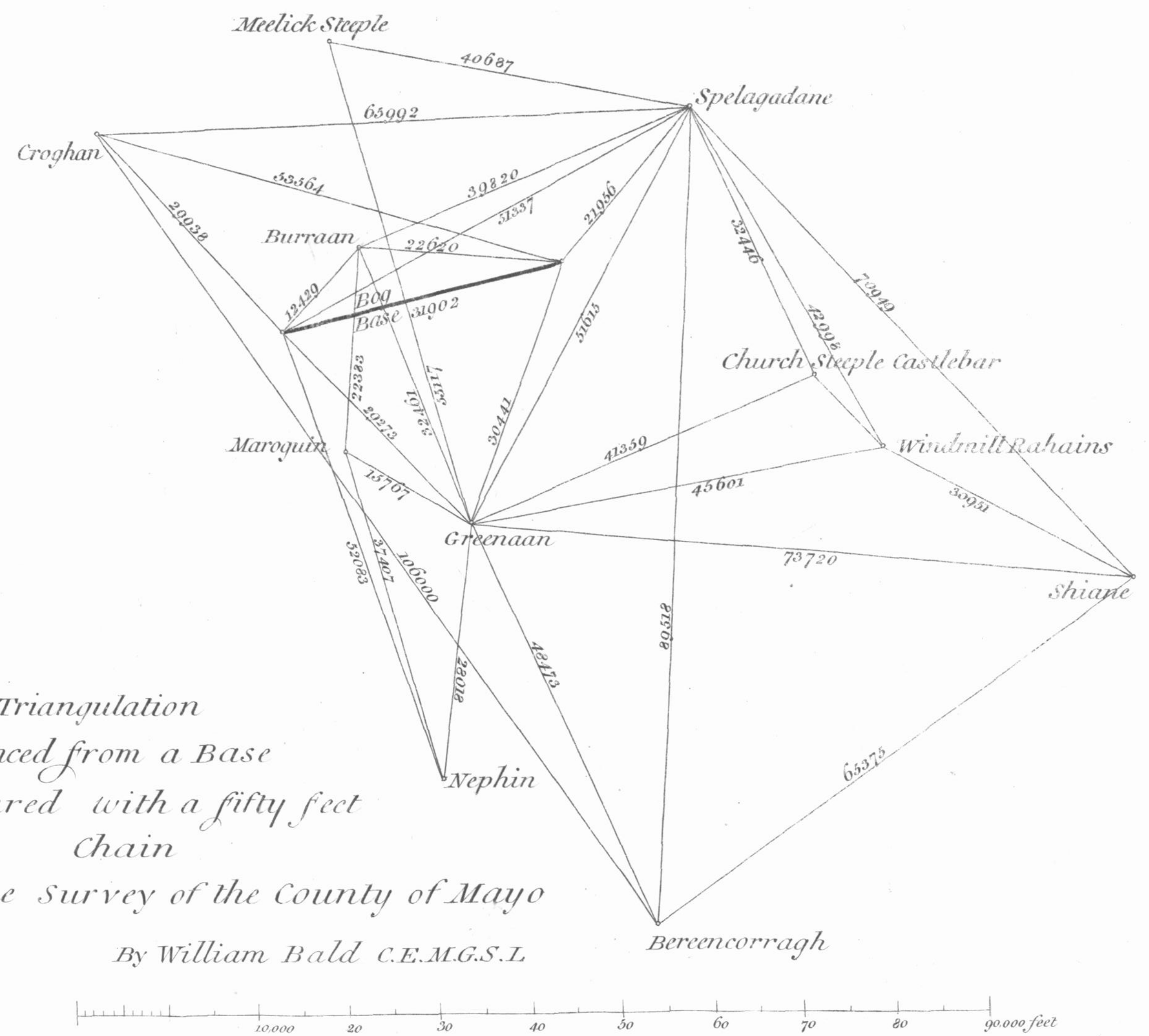
	Feet over the Sea.	
	Barometrically.	Trigonometrically.
Menaan, in Achill Island.		1512
From Myles' Monument	...	1530
		2290
Birreencorragh, mean of three	...	221
Raithhill	...	347
Tarmon-hill	...	2180
Slievemore, mean of three	...	1693,1700
Currawn	...	2254,2266
Keem	...	2380,2367
Curslieve	...	750
Bonmore	...	296
Carrigohara	...	
Burran	...	229
By the Barometer, mean of two Observations	215	
Shraigheen-hill	...	431
Tully	...	125
South station, Ox Mountains	...	1300
North Do. do.	...	1313
Knock Shandrim	426	425
Maumechoy	...	1226
Greenane	..	1278
2d.	...	1261
3d.	...	1280
4th.	1269	
Spinkeen	705	
Sronevoca	928	
Spink	849	
Burran	1211	
2d.	1220	
3d.	1210	
Highest point of Cultivation in Mayo	819	
Knock-na-Deludy, West top	873	
Do. do. East do.	865	
Barny-na-gee	619	
2d.	612	
Burranbeg	877	
Shiane	377	
2d.	374	
3d.	369	
Devlin	...	862
Drimore	...	220
Slievebohane	...	1262
Spelagadane		625
Rahainbar-hill	744	
Knock Raplaghane	749	
Benbuy	698	
Cruoghmore	1397	1412
2d.	1417	1406

Barometrical and trigonometrical heights of the hills and mountains in Mayo.

	Feet over the Sea.	
	Barometrically.	Trigonometrically.
Maroguin	122	
Glen-hill	481	
Gortmore	794	
Aughalasheen	409	
Glencastle-hill	755	
Knocklettacuss	1596	
Trista-hill	429	
Slieve Carn	...	829
Mullranageegh	...	396
Croghan	...	690
Kelgarrow	..	650
Mulaghanoe	...	744
Bockagh	...	702
Brusnagh	...	622
Cappagh	...	474
Knock	...	385
Farnaan	...	377
Kiltulla	...	415
Farm-hill	...	307
Greenwood	...	387
Carn Mask	...	184
Kellroe	...	262
Benleva (East Carn) County Galway	...	1225
The Barometers used were those of Sir Henry Englefield.		

NOTE.

In determining the heights barometrically two barometers were used, one remained stationary at a given point, where observations were made at given intervals of time, and the other carried up over the hills and mountain ridges, where corresponding ones were taken. From the number of elevations I have been enabled to execute a model of the Barony of Morrisk, which contains one hundred and eighteen square miles of the most elevated part of Mayo, and another of the Island of Achill, the largest island on the coast of Ireland, containing thirty-six square miles of very lofty ground. The Model of Morrisk is seven feet six inches by five feet. Achill model is five feet three inches by three feet ten inches; they represent all the roads, lakes, rivers, rising grounds, hills, mountains, houses, villages, towns, &c. &c. &c.—The horizontal and perpendicular scales of the models are five inches to the Irish mile.—It is to be regretted, when the great survey of England was begun, that the country had not been modelled as the survey advanced, whereby the whole elevations of England should have been correctly determined for the construction of the Model, and the heights engraven on the maps published by the Board of Ordnance would then have added considerably to their merit. A model on a scale of four inches to the mile of Great Britain and Ireland with their numerous isles, the long, broken, indented outline of coast, the lofty extensive ranges of mountains in Wales, Scotland, Ireland, and the islands, would give a character and expression to this work of art which could not be surpassed.

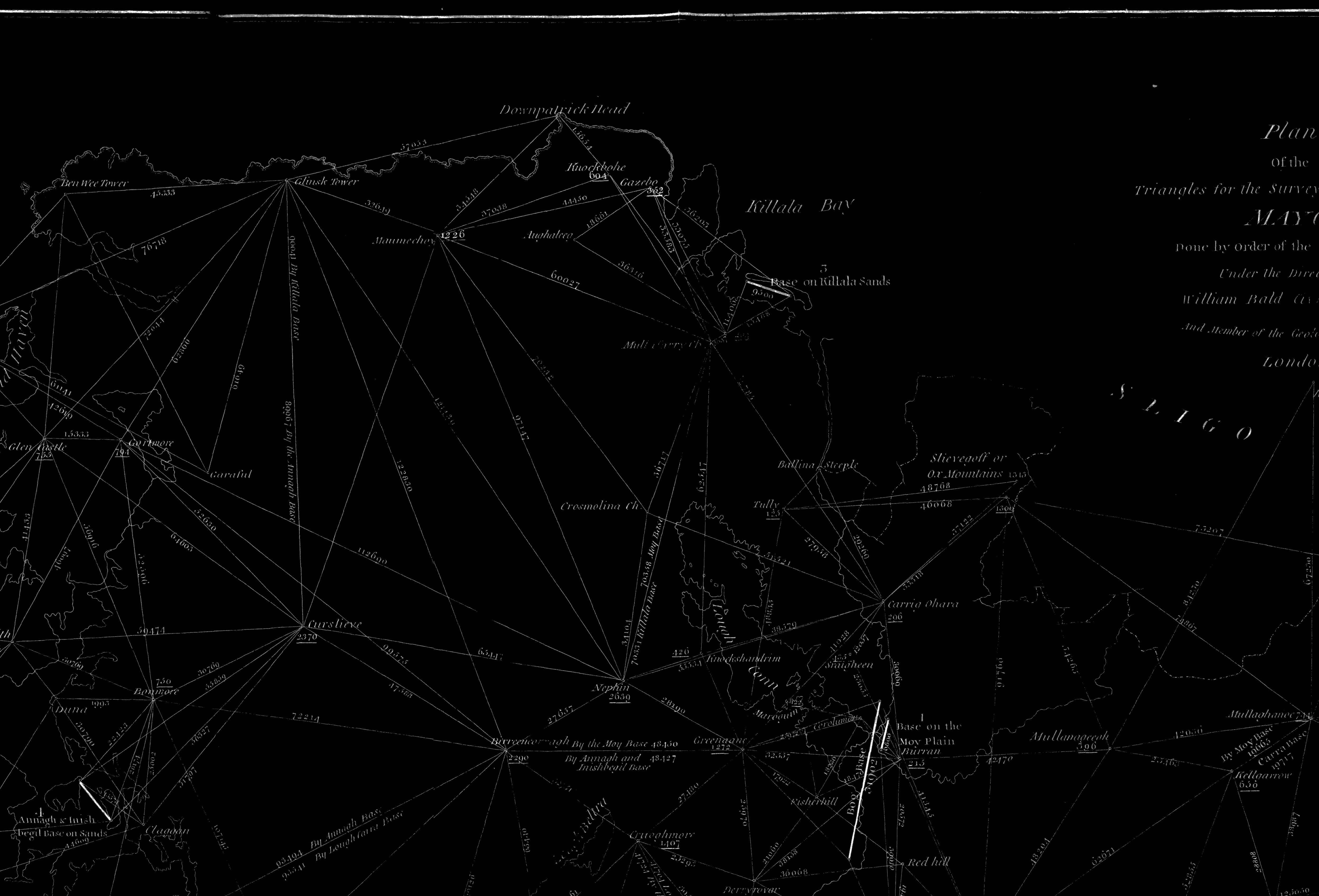


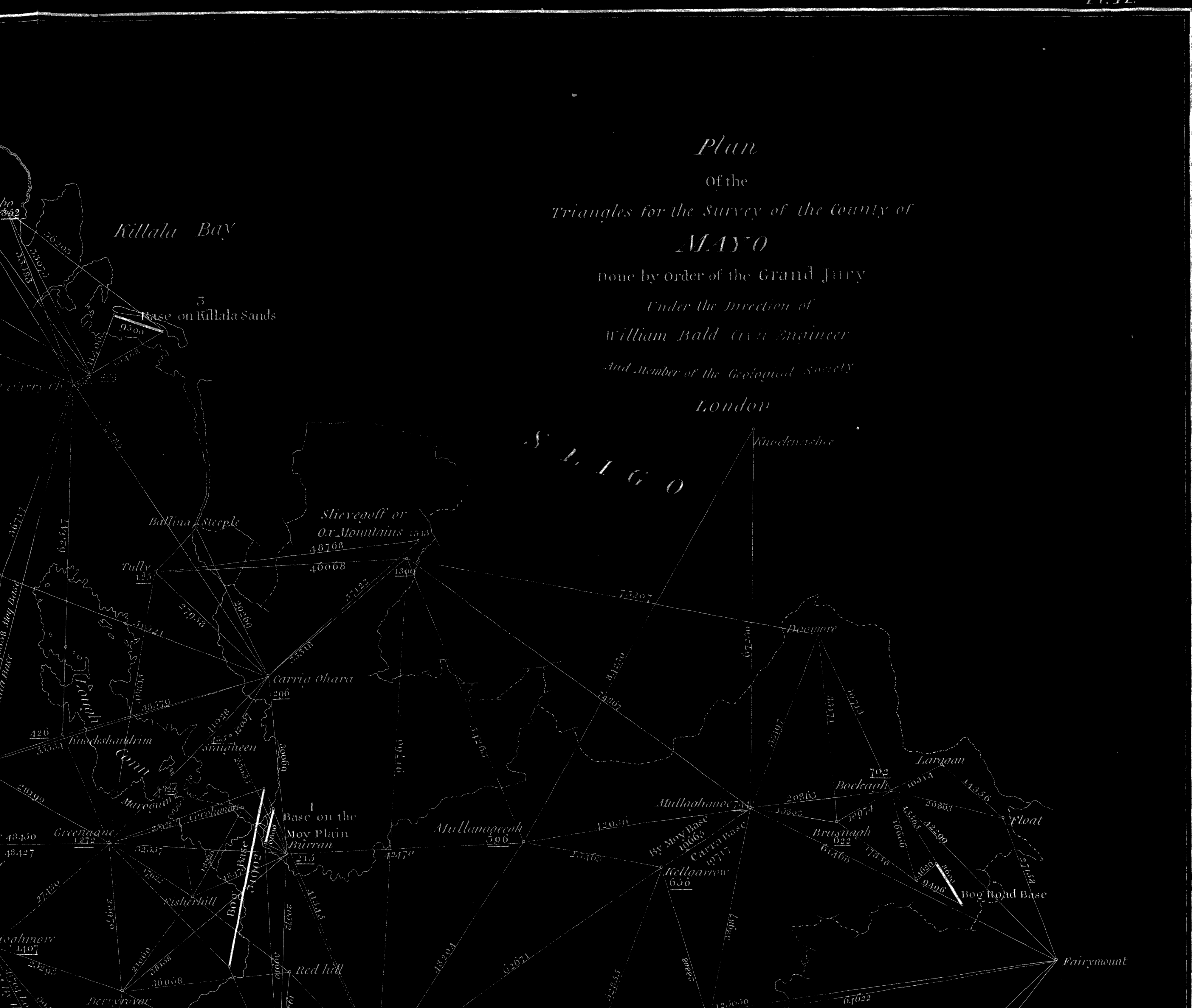
First Triangulation
Commenced from a Base
Measured with a fifty feet
Chain
for the Survey of the County of Mayo

By William Bald C.E.M.G.S.L

J. Taylor Sculp.

Downpatrick Head
Ben Wee Tower
Glinsk Tower
Knockbohe
604
Maumechey
1226
Aughaleea
Aughaglasheen T.
499
Broad Haven
Glen Castle
755
Garmore
794
Garafid
Blacksod Bay
Tarmon
347
Raith
221
Curslieve
2370
Bonmore
750
Duma
993
Nephin
2639
Slievemore
2180
Annagh & Irish
Achil Head
Heem
2260
Clugann
Mihnaane
1521
By Killala Base
By the Annagh Base
By Annagh Base
By Lough Carra Base
By the Moy Base
By Annagh and Inishbeg Base
Cresmolina Ch
ATLANTIC


Plan
Of the
Triangles for the Survey
MAYO
Done by Order of the
Under the Direc
William Bald
And Member of the Geol
London
Killala Bay
SLIGO
Downpatrick Head
Ben Wee Tower
Glinsk Tower
Knockbohe
604
Gazebo
352
Maumechoy
1226
Aughaleeg
3
Base on Killala Sands
9500
Mull Carry Ch.
Glen Castle
755
Gortmore
794
Garaful
By Killala Base
By the Annagh Base
Crosmolina Ch.
Ballina Steeple
Slievegoff or
Ox Mountains
1313
Tully
125
1300
Carrig Ohara
206
Lough
Conn
Knockshandrim
426
Sraigheen
Mareguin
Corslieve
2370
Nephin
2639
By Moy Base
By Killala Base
Bonmore
750
Duna
Birreencorragh
2290
By the Moy Base 48450
By Annagh and
Inishbegil Base 48427
Greenaane
1272
1
Base on the
Moy Plain
Burran
215
Bog Base
Fisherhill
Mullanageeah
596
Mullaghanee
By Moy Base
Carra Base
Kellgarrow
656
4
Annagh & Inish
begil Base on Sands
Claggan
By Annagh Base
By Lough Carra Base
Crueghmore
1407
Derryrevar
Red hill


Plan
Of the
Triangles for the Survey of the County of
MAYO
Done by Order of the Grand Jury
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Killala Bay
3
Base on Killala Sands
9500
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Ballina Steeple
Slievegoff or
Ox Mountains 1313
48768
46068
Tully
125
1300
27958
29260
57122
75267
Deemore
67250
Carrig Ohara
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38579
Knockshandrim
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1272
48450
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1
Base on the
Moy Plain
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215
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31002
Mullanageeah
596
42470
42050
Mullaghanee 714
Bockagh
702
Laragan
Float
20863
10814
14356
Brusnagh
622
61460
17830
12299
9496
8600
Bog Road Base
By Moy Base
10665
Carra Base
19717
Kellgarrow
636
Fisherhill
Red hill
Derryrevar
36068
Fairymount
64622
27158
48204
62671
30713
23171
91760
84270
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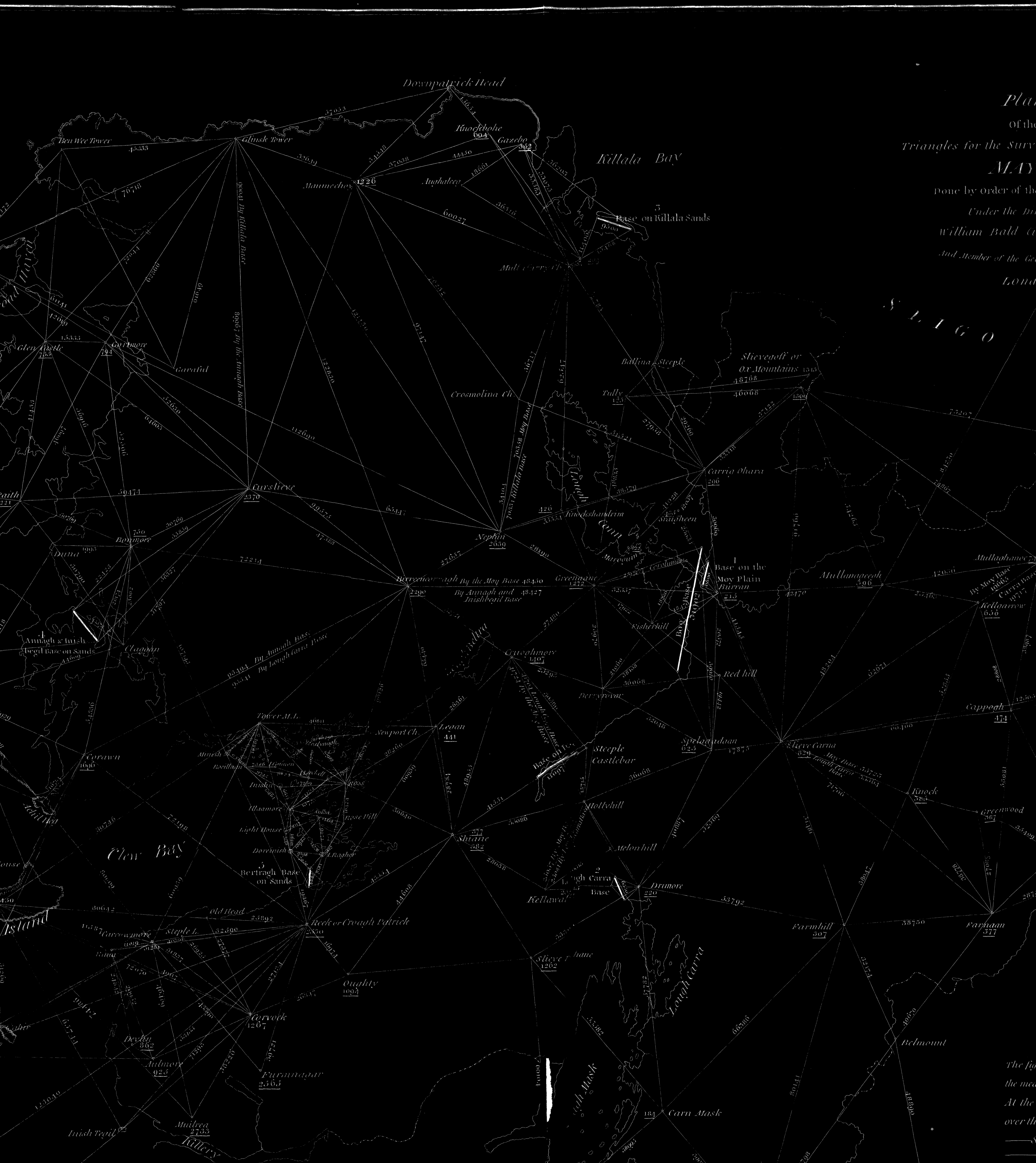
ATLANTIC
OCEAN
Slievemore
2180
4
Annagh & Inish-begil Base on Sands
Claggan
By Annagh Base
By Lough Carra Base
Achil Head
Keem
2266
Minnaune
1521
Achil Island
Corawn
1696
Achil Beg
Tower M.L.
Newport Ch.
Legan
441
Ross
Illaamore
Light House
Dorinish
Rose Hill
Clew Bay
5
Bertragh Base on Sands
Shiane
582
By the Errris of Annagh and Inish Begil Base
By the Lough Carra Base
Myles Monument
Clare Island
1450
Old Head
Reek or Croagh Patrick
2530
Carrowmore
Steple I.
Oughty
1094
Corvock
1267
Devlin
862
Aulmore
925
Furmnagar
2565
Signal Tower
Inish Turk
Muilrea
2733
Inish Tegil
Inish Bofin
Killery



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2370
Nephin
2639
703.58 Moy Base
703.31 Killala Base
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Knockshandrim
Lough
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By the Moy Base 48450
By Annagh and Inishbegil Base 48427
1
Base on the
Moy Plain
Burran
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Bog Base
31002
Mullanageeah
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Mullaghanee
By Moy Base 10665
Carra Base 10717
Kellgarrow
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Red hill
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Derryrevar
Bonmore
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Claggan
93494 By Annagh Base
93541 By Lough Carra Base
Tower M.L.
Newport Ch.
Legan
441
Minish
Roeillaun
Inishu
Illaamore
Light House
Dorrinish
I. Ragher
Rose Hill
Ross
Corawn
1696
Clew Bay
5
Bertragh Base
on Sands
Achill Hea
Island
Old Head
Carrowmore
Steple L.
Reek or Croagh Patrick
2530
Oughty
1094
Corvock
1267
Devlin
862
Aulmore
925
Furmnagar
2565
Muilrea
2733
Inish Tegil
Killery
Shiane
377
382
Base on Ice
11097
Steeple
Castlebar
Splaagadaan
625
Slieve Carna
829
Moy Base 53725
Lough Carra Base 53564
Cappogh
474
Knock
385
Greenwood
387
Hollyhill
Melonhill
2
Lough Carra
Base
Kellawal
Drumore
220
Slieve r hane
1262
Lough Carra
Farmhill
307
Farnaan
377
Belmount
Lough Mask
184
Carn Mask
The fig
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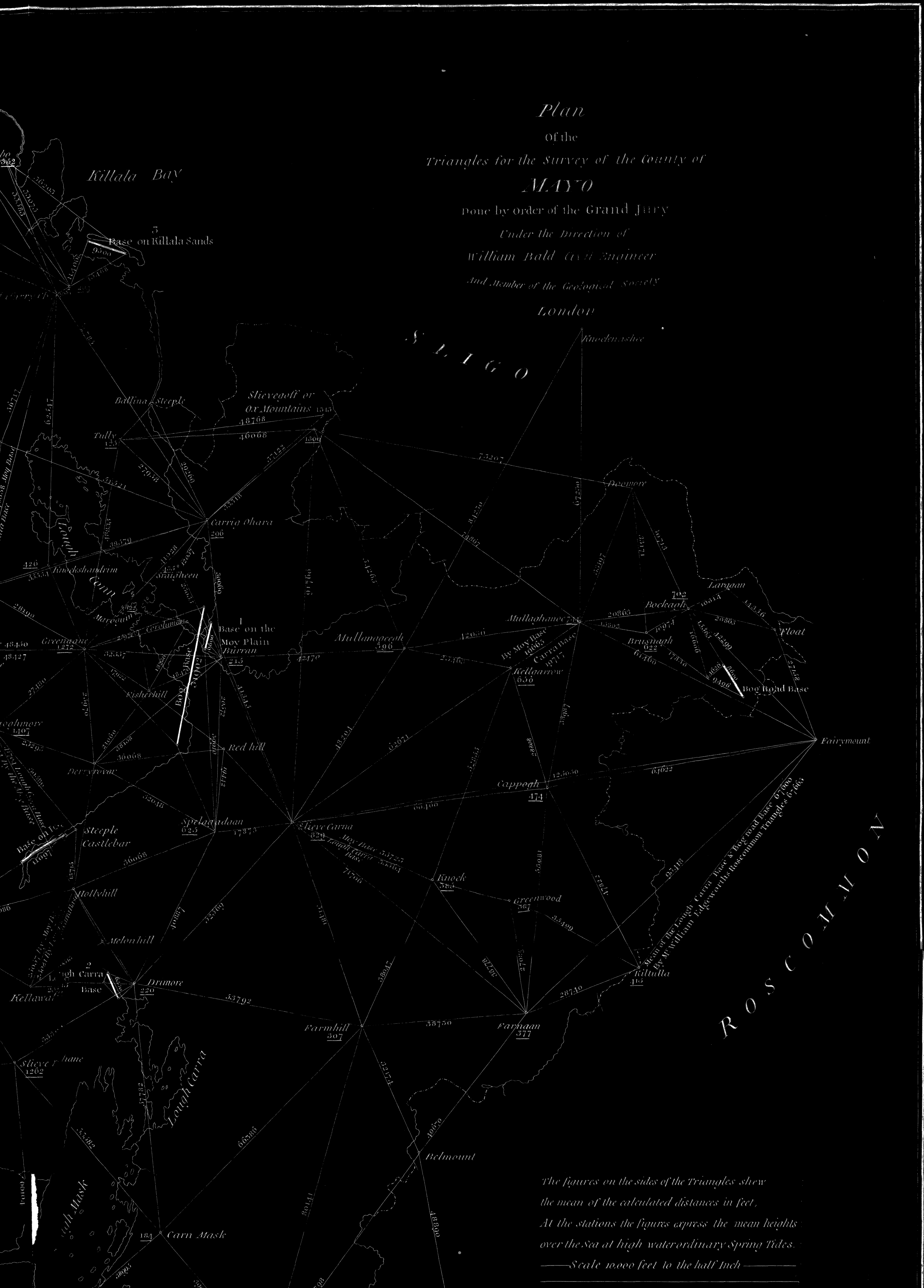
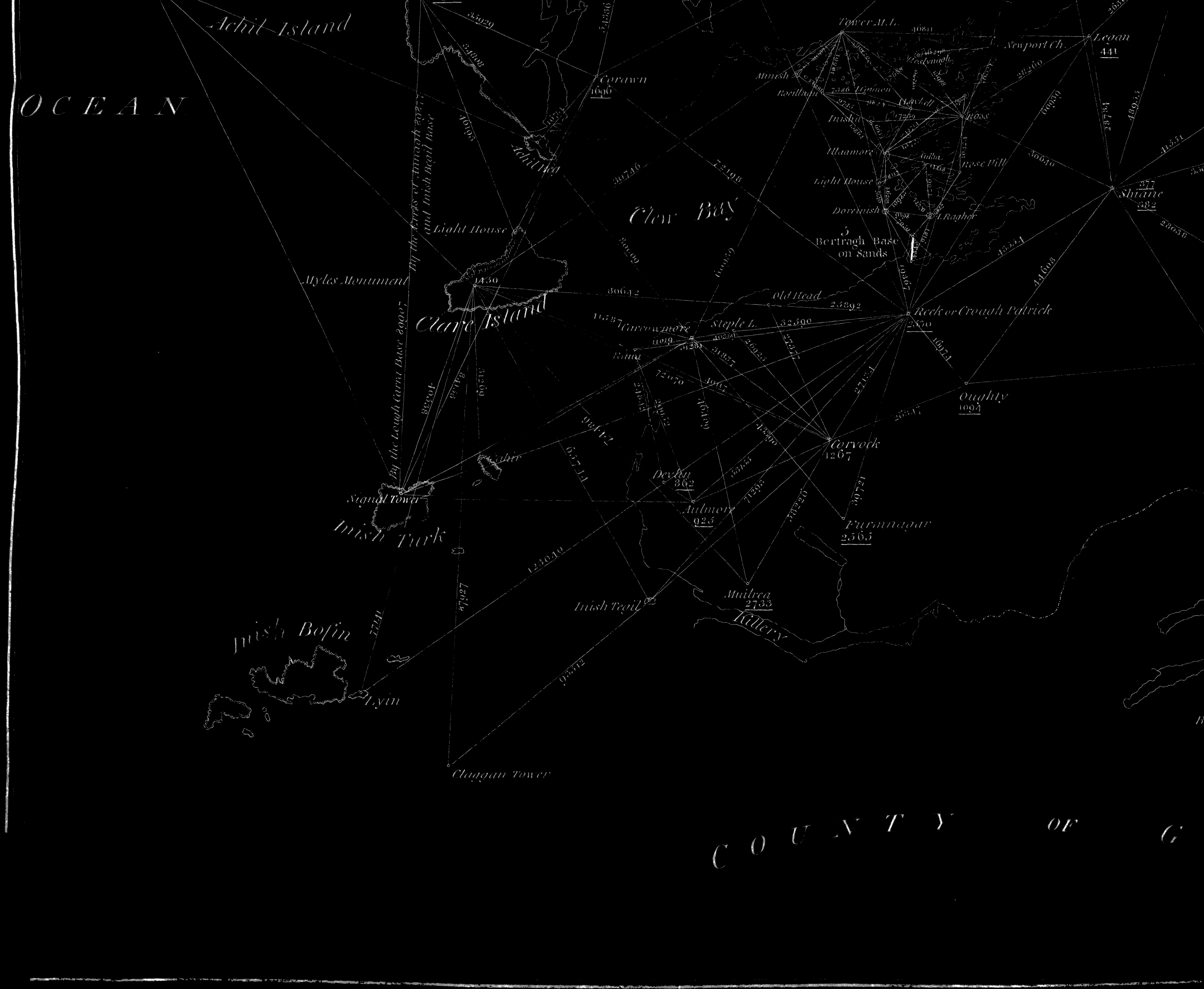
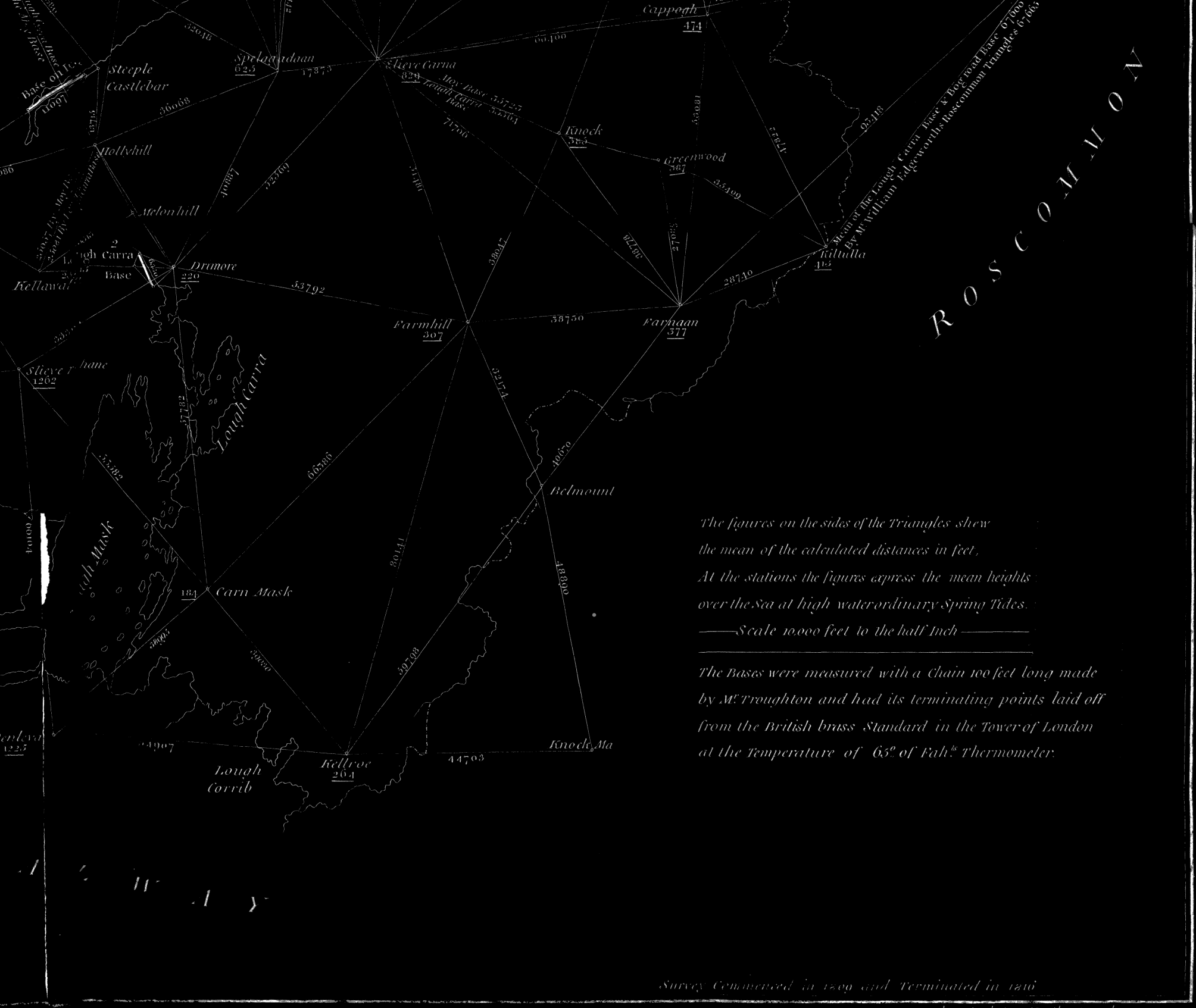

Plan
Of the
Triangles for the Survey of the County of
MAYO
Done by Order of the Grand Jury
Under the Direction of
William Bald Civil Engineer
And Member of the Geological Society
London
Killala Bay
3
Base on Killala Sands
9500
SLIGO
ROSCOMMON
Knocknashee
Ballina Steeple
Slievegoff or
Ox Mountains 1313
Tully
125
Deemore
Carrig Ohara
206
Knockshandrim
426
Lough Conn
Straigheen
Mareguin
Greenaane
1272
1
Base on the
Moy Plain
Burran
215
Mullanageeah
596
Mullaghanoe 744
Bockagh
702
Laragan
Float
Brusnagh
622
Bog Road Base
Fairymount
Kellgarrow
656
By Moy Base 19665
Carra Base 19717
Fisherhill
Bog Base 31002
Red hill
Derryrevar
Cappogh
474
Splagadaan
625
Slieve Carna
829
Moy Base 55725
Lough Carra Base 55564
Knock
365
Greenwood
387
Steeple
Castlebar
Base on Ice
11097
Hollyhill
Melonhill
2
Lough Carra
Base
Drumore
220
Kellawal
Farmhill
307
Farnaan
377
Kiltulla
415
Mean of the Lough Carra Base & Bog road Base 67600
By Mr William Edgeworths Roscommon Triangles 67665
Slieve Rhane
1262
Lough Carra
Belmount
Lough Mask
Carn Mask
184
The figures on the sides of the Triangles shew
the mean of the calculated distances in feet,
At the stations the figures express the mean heights
over the Sea at high water ordinary Spring Tides.
Scale 10,000 feet to the half Inch


OCEAN
Achil Island
Achil Hd
Corawn
1696
Light House
Myles Monument
Clare Island
1450
By the Errris of Annagh 29277 and Inish Beail Base
By the Lough Carra Base 29997
Clew Bay
Tower M.L.
Newport Ch.
Legan
441
Minish
Roillaun
Inishu
Illaamore
Light House
Dorrinish
I. Ragher
Rose Hill
Ross
Shiane
377
382
5
Bertragh Base
on Sands
Old Head
Reek or Croagh Patrick
2530
Carrowmore
Steple L.
Rann
Oughty
1094
Corvock
1267
Devlin
862
Aulmore
923
Furmnagar
2565
Signal Tower
Inish Turk
Inish Bofin
Lyin
Claggan Tower
Inish Tegil
Muilrea
2733
Killery
COUNTY OF G


Tower M.L.
Newport Ch.
Legan 441
Corawn 1696
Achil Head
Clew Bay
Minish
Roeillaun
Inishu
Illaamore
Light House
Doreinish
I. Ragher
Ross
Rose Hill
5 Bertragh Base on Sands
Shiane 377 382
Old Head
Reek or Croagh Patrick 2530
Steple L.
Carrowmore
Oughty 1094
Corvock 1267
Devlin 862
Aulmore 925
Furmnagar 2565
Muilrea 2733
Inish Tegil
Killery
Base on Ice
Steeple Castlebar
Hollyhill
Melonhill
2 Lough Carra Base
Drumore 220
Kellawal
Slieve 1262
Lough Carra
Spelagadaan 625
Slieve Carna 829
Cappagh 474
Knock 385
Greenwood 387
Farmhill 307
Farnaan 377
Belmount
Carn Mask 184
Benleva 1225
Kellroe 264
Lough Corrib
Knock Ma
COUNTY OF GALWAY

ROSCOMMON



The figures on the sides of the Triangles shew the mean of the calculated distances in feet, At the stations the figures express the mean heights over the Sea at high water ordinary Spring Tides.

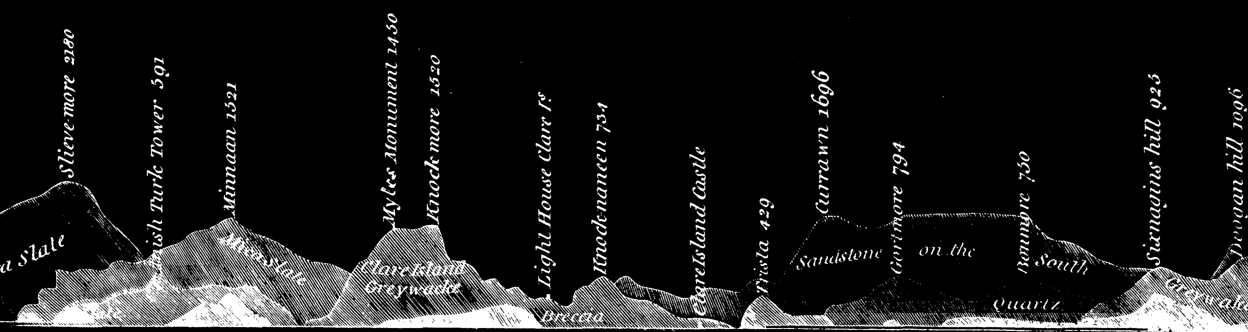
——Scale 10,000 feet to the half Inch——

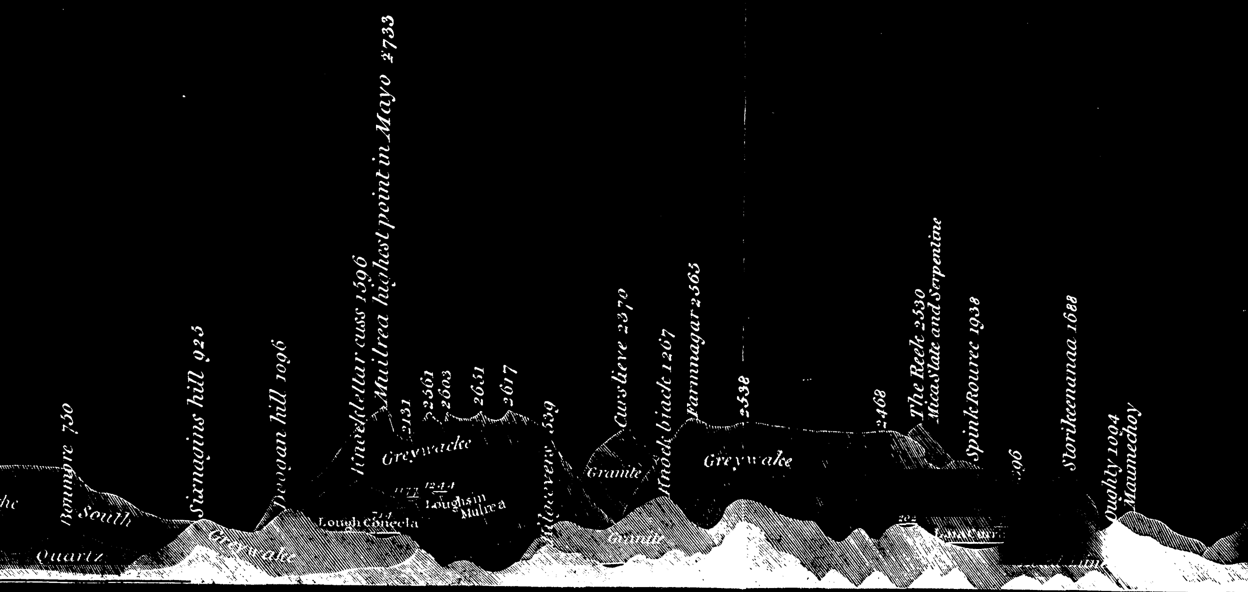
The Bases were measured with a Chain 100 feet long made by Mr. Troughton and had its terminating points laid off from the British brass Standard in the Tower of London at the Temperature of 65º of Fahrs. Thermometer.

Survey Commenced in 1809 and Terminated in 1816

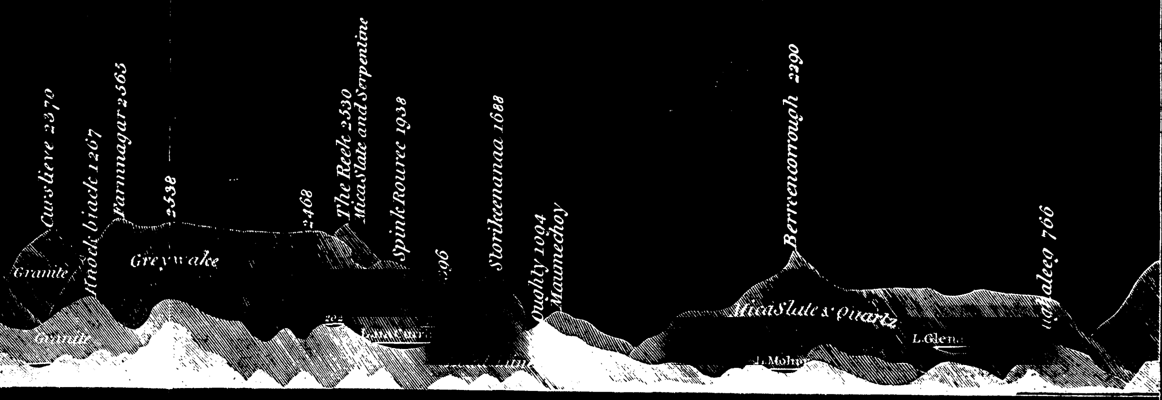
J. Taylor Sculpt. 19 North Strand.

Croghan 2254
Keem
Achill Island
Mica Slate & Quartz
Achill Head
Atlantic Ocean
Tower
Granite
Termon-hill 347
Slievemore 2140
Mica Slate
Croaghaun 2192
Minnaun 1521


Slieve-more 2180
Turk Tower 591
Minnaan 1521
Myles Monument 1450
Knockmore 1520
Light House Clare Is
Knocknaneen 734
Clare Island Castle
429
Curraun 1696
Corrmore 794
Bonmore 750
hill 925
hill 1096
Slate
Mica Slate
Clare Island Greywacke
Breccia
Sandstone on the South
Quartz



Benmore 750
South
Quartz
Sixnagins hill 925
Greywake
Deogan hill 1096
Lough Conecla
Knockdellar cuss 1596
Muilrea highest point in Mayo 2733
Greywacke
2561
2603
2651
2617
Loughs in Mulrea
539
Curslieve 2370
Granite
Knock briack 1267
Farnnagar 2565
2538
Greywake
2468
The Reek 2530
Mica Slate and Serpentine
Spink Rourec 1938
Storikeenanaa 1688
Oughty 1004
Maumechoy



Granite
Greywake
2538
2468
The Reek 2530
Mica Slate and Serpentine
Maumechoy
Berrencorrough 2290
Mica Slate & Quartz
L. Glen
766

General Section

Of the Mountains of the County of

Between Longitudes 8°.19'.an

And Latitudes 55°.28'.35"a

By William Bald C

And of the

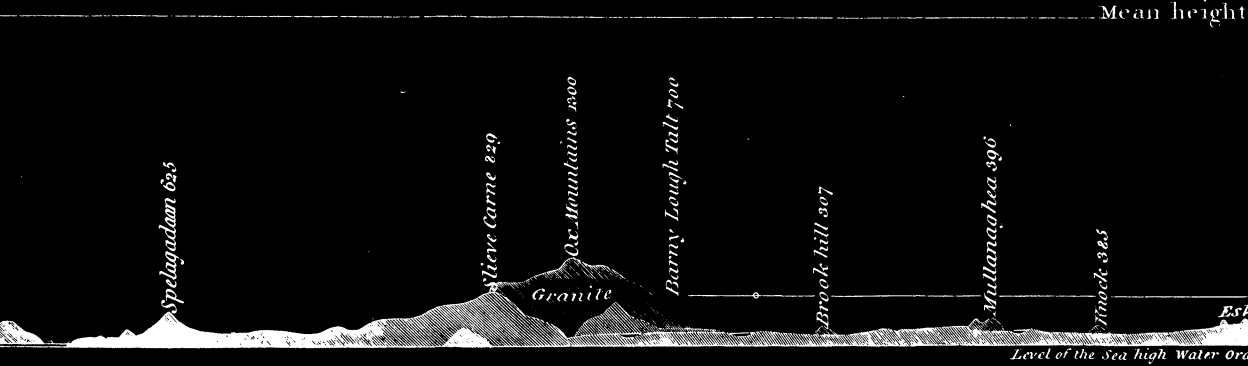
eral Section

tains of the County of Mayo,

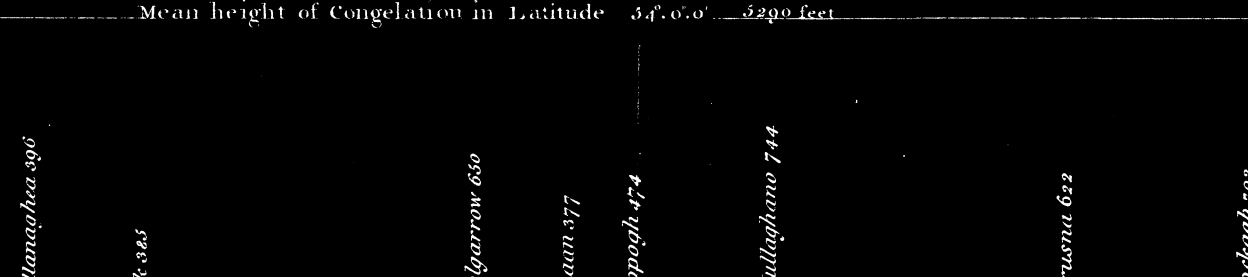
en Longitudes 8°.19′and 10°.50′

d Latitudes 53°.28′.35″and 54°.20′.29″

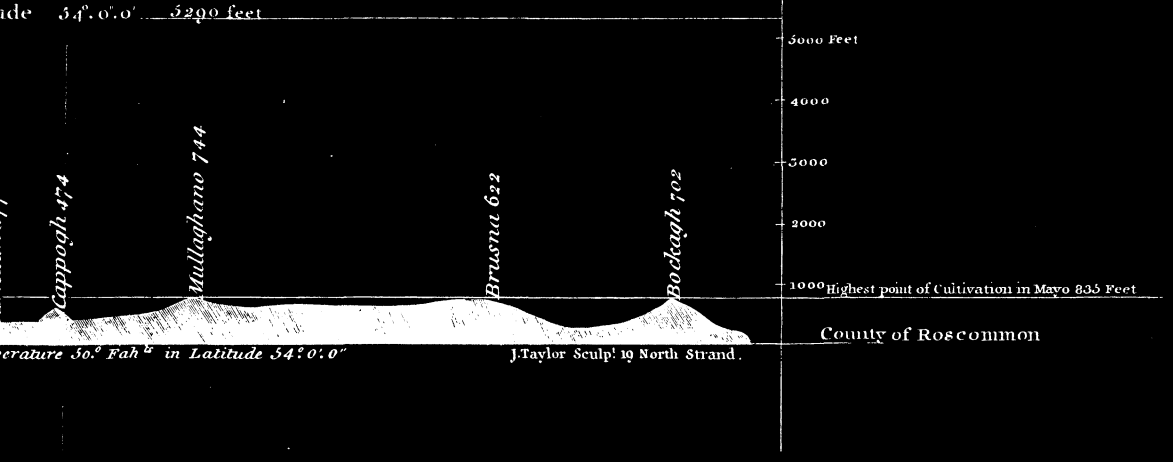
By William Bald Civil Engineer M.R.I.A.
And of the Geological Society of
London.



Pl


Mean height of Congelation in Latitude 54°.0'.0" 3290 feet
Mullamaghea 396
Stock 325
Eskers
Kilgarrow 650
Carnaan 377
Cappogh 474
Mullaghano 744
Brusna 622
Level of the Sea high Water Ordinary Spring Tides Mean Temperature 50.° Fah.t in Latitude 54°.0'.0"
J.Taylor Sculp.t 19 North

Pl. III.


ude 54°.0'.0" 3290 feet
5000 Feet
4000
3000
2000
1000
Highest point of Cultivation in Mayo 835 Feet
Cappoph 774
Mullaghane 744
Brusna 622
Bockagh 702
County of Roscommon
erature 50.° Fah.t in Latitude 54°.0'.0"
J.Taylor Sculp.t 19 North Strand.

PLAN of the Chain used in measuring the bases for the Trigonometrical Survey of MAYO

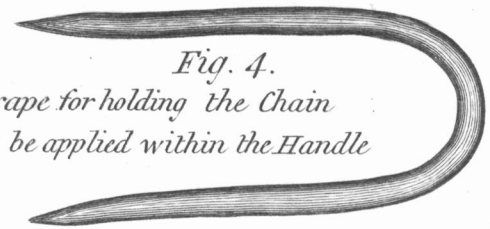


Fig. 4.
Grape for holding the Chain to be applied within the Handle

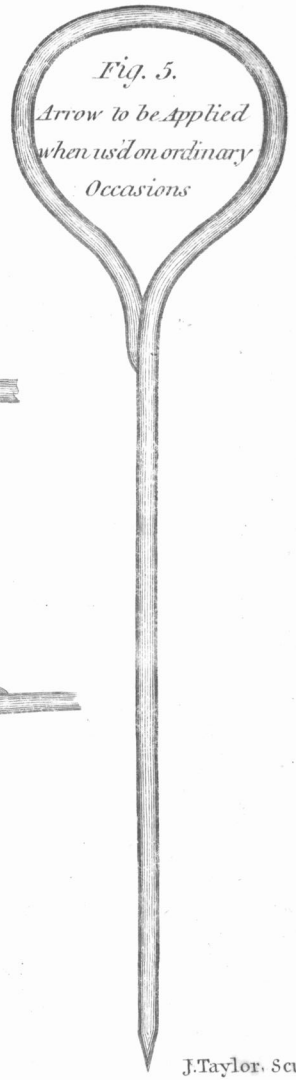


Fig. 5.
Arrow to be Applied when used on ordinary Occasions

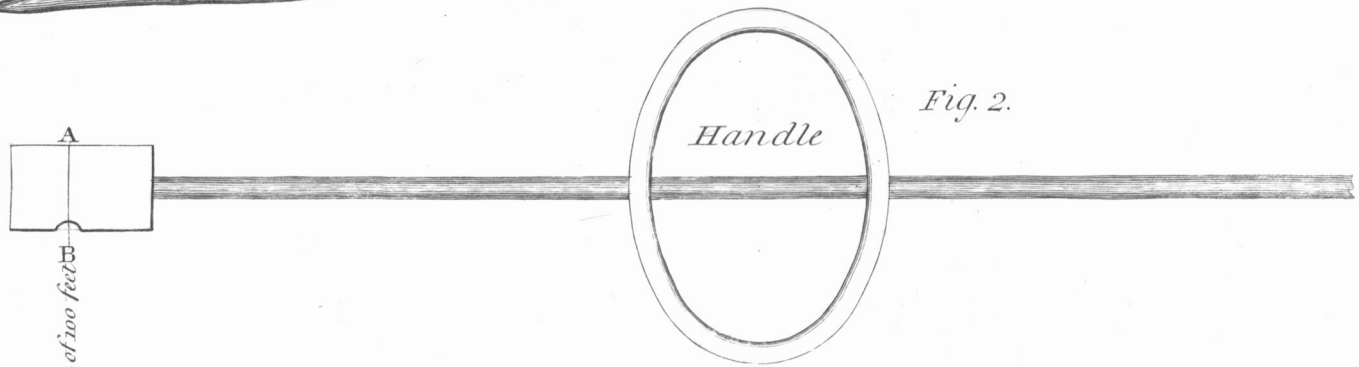


Fig. 2.

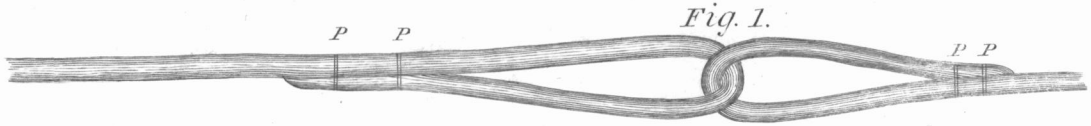


Fig. 1.
Junction of Links

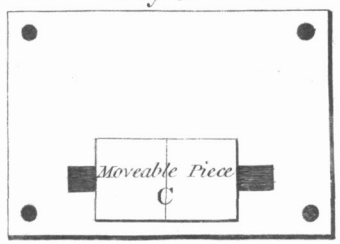
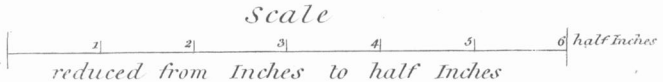
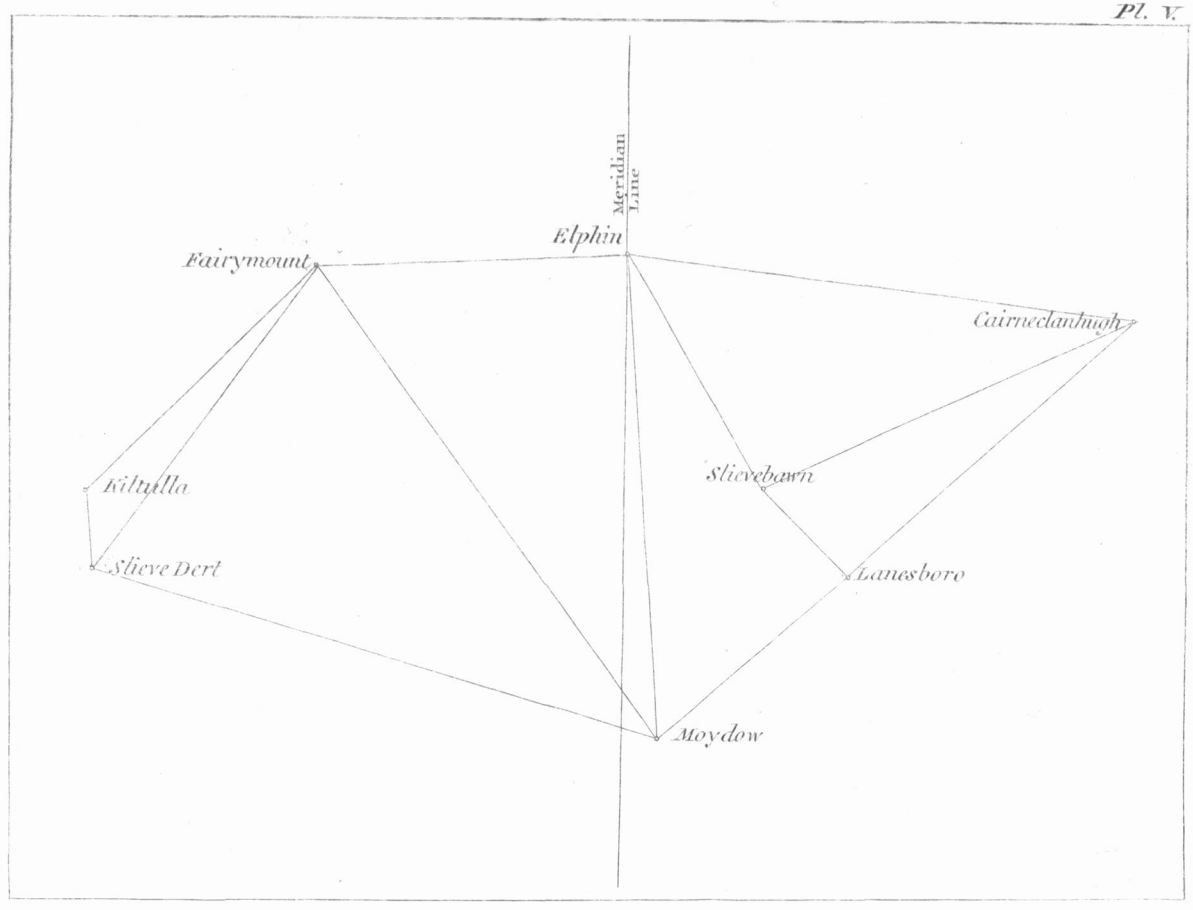


Fig. 3.
to be applied to the end of the Chain when measuring by lines of Coincidence



J.Taylor, Sculp.


Meridian Line
Elphin
Fairymount
Cairneclanhugh
Slievebawn
Kiltulla
Slieve Dert
Lanesboro
Moydow

DESCRIPTION OF PLATE IV.

The chain used in measuring the bases is one hundred feet long, consisting of twenty links of hard round iron, one quarter of an inch in diameter, which are simply hooked together by folding down the extremities of the bar, and pinning them to the body, as represented in Fig. I. PP.

Fig. 2. Represents the handles or extreme links, with the terminating point marked by a line AB drawn on a square piece of brass affixed to the link, and having also a notch B into which the pin Fig. 5 could be placed upon occasions when great accuracy was not required.

Fig. 3. The mark for each length of the chain, being a square plate of brass, with four spikes or prongs beneath to hold it firm on timber, ice, or on the ground, with a moveable piece C, which slides along a groove, so as to coincide with the terminating line A B in Fig. 2.

Fig. 4. A staple or grape to be pushed down into the ground over the handle, Fig. 2. to keep the chain steady while the adjustment is made.